PATENT

ATTORNEY'S DOCKET NUMBER 24555-001

TRANSMITTAL LETTER TO THE U.S. DESIGNATED OFFICE (DO/US) - ENTRY INTO NATIONAL STAGE UNDER 35 USC 371

INTERNATIONAL APP. NO.

INTERNATIONAL FILING DATE PRIORITY DATE CLAIMED

PCT/JP99/05023

14 September 1999

25 September 1998

TITLE OF INVENTION

METHOD OF PREVENTING CONTAMINATION OF CANVAS USED IN PAPER **MACHINE**

APPLICANT(S) FOR DO/US

Kunio SEKIYA

Box PCT

Assistant Commissioner for Patents

Washington, D.C. 20231 ATTENTION: DO/US

TRANSMITTAL REGARDING AMENDMENTS TO THE CLAIMS <u>UNDER PCT ARTICLE 19 (35 U.S.C. 371(c)(3))</u>

Under the provision of PCT Article 19 and 35 U.S.C. 3719(c)(3), Applicants herewith provide amendments to the claims which were entered into the international application, including an English translation of such amendments and also substitute pages 25, 26, and 27 containing the newly amended claims in English.

Respectfully submitted,

Kathleen W. Geiger

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AMENDMENT OF PROCEDURE (AMENDMENT ACCORDING TO ARTICLE 11)

To: Director-General of Japanese Patent Office

- 1. Indication of International Application PCT/JP99/05023
- 2. Applicant

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4. Object of amendment

Claims

5. Content of amendment

(1) Amend "A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, whereby a predetermined amount of a surface treatment agent is continuously supplied to the surface of the canvas, facing the paper strip, in a stage of operation prior to the paper strip being pressed into contact with the

canvas as well as the drum-dryers, while the paper strip is being fed by operation of the paper machine." as disclosed in Claim 1 in Page 25 to "A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, whereby a silicone oil is continuously supplied at a spray rate of 0.1 to 200 mg/m² per min to the surface of the canvas, facing the paper strip, in a stage of operation prior to the paper strip being pressed into contact with the canvas as well as the drum-dryers, while the paper strip is being fed by operation of the paper machine."

- (2) Amend "A method of preventing contamination of the canvas according to Claim 1, wherein the surface treatment agent contains a silicon oil." as disclosed in Claim 2 in Page 25 to "A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, whereby a silicone oil is continuously supplied at a spray rate of 0.1 to 200 mg/m² per min to the surface of canvas rolls for guiding the canvas, in a stage of operation prior to the paper strip being pressed into contact with the canvas as well as the drum-dryers, while the paper strip is being fed by operation of the paper machine."
- (3) Amend "A method of preventing contamination of the canvas according to Claim 1, wherein a silicon oil emulsified with a surfactant is used for the surface treatment agent." as disclosed in Claim 3 in Page 25 to "A method of preventing contamination of the canvas according to Claim 1 or 2, wherein a silicon oil emulsified with a surfactant is used."
- (4) Amend "A method of preventing contamination of the canvas according to Claim 2 or 3, wherein the surface treatment agent is diluted with water before being put to use." as disclosed in Claim 4 in Page 25 to "A method of preventing contamination of the canvas according to Claim 1 or 2, wherein the silicon oil is

further diluted with water before being put to use."

- (5) Amend "A method of preventing contamination of the canvas according to Claim 2 or 3, wherein the surface treatment agent diluted with water heated to a temperature in the range of 50 to 80°C immediately before spraying is put to use." as disclosed in Claim 5 in Page 25 to "A method of preventing contamination of the canvas according to Claim 1 or 2, wherein the silicon oil diluted with water heated to a temperature in the range of 50 to 80°C immediately before spraying is put to use."
- (6) Amend "A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, whereby a silicone oil is continuously supplied at a spray rate of 0.1 to 200 mg/m² per min to the surface of the canvas, facing the paper strip, in a stage of operation prior to the paper strip being pressed into contact with the canvas as well as the drum-dryers, while the paper strip is being fed by operation of the paper machine." as disclosed in Claim 6 in Page 25 to "A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, said method comprising the following steps 1) to 4):
- 1) the silicone oil supply step for supplying a silicone oil to the surface of the canvas;
- 2) the silicone oil permeation and adhesion step for causing the silicone oil to permeate through the canvas and adhere to the surface thereof under heat and pressure;
- 3) the silicone oil transfer step for pressing a paper strip against the canvas, causing the silicone oil to be transferred to the paper strip; and
- 4) the silicone oil replenishment step for replenishing the silicone oil depleted after transferred from the canvas."

- (7) Amend "A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, whereby a predetermined amount of a surface treatment agent is continuously supplied to the surface of canvas rolls for guiding the canvas, in a stage of operation prior to the paper strip being pressed into contact with the canvas as well as the drum-dryers, while the paper strip is being fed by operation of the paper machine." as disclosed in Claim 7 in Pages 25 and 26 to "A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, said method comprising the following steps 1) to 5):
- 1) the silicone oil supply step for supplying a silicone oil to the surface of an out-roll;
- 2) the silicone oil shifting step for shifting the silicone oil from the surface of the out-roll to the canvas;
- 3) the silicone oil permeation and adhesion step for causing the silicone oil to permeate through the canvas and adhere to the surface thereof under heat and pressure;
- 4) the silicone oil transfer step for pressing a paper strip against the canvas, causing the silicone oil to be transferred to the paper strip; and
- 5) the silicone oil replenishment step for replenishing the silicone oil depleted after transferred from the canvas."
 - (8) Delete Claim 8 in Page 26.
 - (9) Delete Claim 9 in Page 26.
 - (10) Delete Claim 10 in Page 26.
 - (11) Delete Claim 11 in Page 26.
 - (12) Delete Claim 12 in Pages 26 and 27.
 - (13) Delete Claim 13 in Page 27.

- 6. List of attached documents
 - (1) Claims, Pages 25, 26 and 27

CLAIMS

- 1. (After amendment) A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, whereby a silicone oil is continuously supplied at a spray rate of 0.1 to 200 mg/m² per min to the surface of the canvas, facing the paper strip, in a stage of operation prior to the paper strip being pressed into contact with the canvas as well as the drum-dryers, while the paper strip is being fed by operation of the paper machine.
- 2. (After amendment) A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, whereby a silicone oil is continuously supplied at a spray rate of 0.1 to 200 mg/m² per min to the surface of canvas rolls for guiding the canvas, in a stage of operation prior to the paper strip being pressed into contact with the canvas as well as the drum-dryers, while the paper strip is being fed by operation of the paper machine.
- 3. (After amendment) A method of preventing contamination of the canvas according to Claim 1 or 2, wherein a silicon oil emulsified with a surfactant is used.
- 4. (After amendment) A method of preventing contamination of the canvas according to Claim 1 or 2, wherein the silicon oil is further diluted with water before being put to use.
- 5. (After amendment) A method of preventing contamination of the canvas according to Claim 1 or 2, wherein the silicon oil diluted with water heated to a temperature in the range of 50 to 80°C immediately before spraying is put to use.
 - 6. (After amendment) A method of preventing contamination of a canvas

for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, said method comprising the following steps 1) to 4):

- 1) the silicone oil supply step for supplying a silicone oil to the surface of the canvas;
- 2) the silicone oil permeation and adhesion step for causing the silicone oil to permeate through the canvas and adhere to the surface thereof under heat and pressure;
- 3) the silicone oil transfer step for pressing a paper strip against the canvas, causing the silicone oil to be transferred to the paper strip; and
- 4) the silicone oil replenishment step for replenishing the silicone oil depleted after transferred from the canvas.
- 7. (After amendment) A method of preventing contamination of a canvas for pressing a paper strip against the surface of drum-dryers used for drying the paper strip in a paper machine, said method comprising the following steps 1) to 5):
- 1) the silicone oil supply step for supplying a silicone oil to the surface of an out-roll;
- 2) the silicone oil shifting step for shifting the silicone oil from the surface of the out-roll to the canvas;
- 3) the silicone oil permeation and adhesion step for causing the silicone oil to permeate through the canvas and adhere to the surface thereof under heat and pressure;
- 4) the silicone oil transfer step for pressing a paper strip against the canvas, causing the silicone oil to be transferred to the paper strip; and
- 5) the silicone oil replenishment step for replenishing the silicone oil depleted after transferred from the canvas.

- 8. Deleted
- 9. Deleted
- 10. Deleted
- 11. Deleted
- 12. Deleted
- 13. Deleted





手 続 補 正 書

(法第11条の規定による補正)

特許庁長官殿

- 1. 国際出願の表示 PCT/JP99/05023
- 2. 出願人

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4. 補正の対象

請求の範囲

5. 補正の内容

- (1) 請求の範囲第22頁第1項「抄紙機において紙体の 乾燥に使用する円筒状ドライヤに対して、該紙体を 押圧するためのカンバスに関する汚染防止方法であ って、抄紙機の運転により紙体が供給されている状 態において、カンバスとドライヤとの間に紙体が圧 接される前の段階で、カンバスの直接表面に対して 、連続的に一定量の表面処理剤を供給付与せしめ続 けることを特徴とする汚染防止方法。」を「抄紙機 において紙体の乾燥に使用する円筒状ドライヤに対 して、該紙体を押圧するためのカンバスに関する汚 染防止方法であって、抄紙機の運転により紙体が供 給されている状態において、カンバスとドライヤと の間に紙体が圧接される前の段階で、カンバスの直 接表面に対して、連続的に $0.1 \sim 200$ mg/m 2 ・分のシリコンオイルを供給付与せしめ続けるこ とを特徴とする汚染防止方法。」に補正する。
- (2)請求の範囲第22頁第2項「表面処理剤がシリコンオイルを含むことを特徴とする請求項1記載の汚染防止方法。」を「抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、抄紙機の運転により紙体が供給されている状態において、カンバスとドライヤとの間に紙体が圧接される前の段階で、カンバスを案内するカンバスロールの表面に対して、連続的に0.1~200mg/m²・分のシリコンオイルを供給付与せしめ続けることを特徴とする汚染防止方法。」に補正する。
- (3)請求の範囲第22頁第3項「表面処理剤としてシリ

コンオイルを界面活性剤で乳化したものを使用することを特徴とする請求項1記載の汚染防止方法。」を「シリコンオイルを界面活性剤で乳化したものを使用することを特徴とする請求項1又は2記載の汚染防止方法。」に補正する。

- (4)請求の範囲第22頁第4項「上記表面処理剤を水で 希釈して使用することを特徴とする請求項2又は3 記載の汚染防止方法。」を「更にシリコンオイルを 水で希釈して使用することを特徴とする請求項1又 は2記載の汚染防止方法。」に補正する。
- (5)請求の範囲第22頁第5項「上記表面処理剤を散布寸前に50~80℃に加熱した水で希釈して使用することを特徴とする請求項2又は3記載の汚染防止方法。」を「散布寸前に50~80℃に加熱した水で希釈して使用することを特徴とする請求項1又は2記載の汚染防止方法。」に補正する。
- (6)請求の範囲第22頁第6項「抄紙機において紙体の 乾燥に使用する円筒状ドライヤに対して、該紙体を 押圧するためのカンバスに関する汚染防止方法であ って、抄紙機の運転により紙体が供給されている状態において、カンバスとドライヤとの間に紙体が圧 接される前の段階で、カンバスの直接表面に対して、連続的に0.1~200mg/m²・分のシリコンオイルを供給付与せしめ続けることを特徴とする 汚染防止方法。」を「抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、 以下1)~4)の工程を含むことを特徴とする汚染防止方法。

- 1) カンバスにシリコンオイルを供給付与するシリコンオイル供給付与工程
- 2) カンバスの面にシリコンオイルを熱と圧力で浸透付着させる浸透付着工程
- 3) カンバスに紙が圧接されてシリコンオイルが紙 に転移するシリコンオイル転移工程
- 4)移行して減耗したカンバスのシリコンオイルを. 補充するシリコンオイル補充工程」に補正する。
- (7)請求の範囲第22頁第7項「抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、抄紙機の運転により紙体が供給されている状態において、カンバスとドライヤとの間に紙体が圧接される前の段階で、カンバスを案内するカンバスロールの表面に対して、連続的に一定量の表面処理剤を供給付与せしめ続けることを特徴とする汚染防止方法。」を「抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、以下の工程1)~5)を含むことを特徴とする汚染防止方法。
 - 1) アウトロールにシリコンオイルを供給付与する たためのシリコンオイル供給付与工程
 - 2) アウトロールからカンバスにシリコンオイルを移行させるためのシリコンオイル移行工程
 - 3) カンバスの面にシリコンオイルを熱と圧力で浸透付着させるシリコンオイル浸透付着工程
 - 4) カンバスに紙が圧接されてシリコンオイルが紙 に転移するシリコンオイル転移工程

- 5) 転移して減耗したカンバスのシリコンオイルを 補充するシリコンオイル補充工程」に補正する。
- (8)請求の範囲第23頁第8項を削除する。
 - (9)請求の範囲第23頁第9項を削除する。
 - (10)請求の範囲第23頁第10項を削除する。
 - (11)請求の範囲第23頁第11項を削除する。
 - (12)請求の範囲第23頁第12項を削除する。
 - (13)請求の範囲第24頁第13項を削除する。 従って、補正により請求の範囲第24頁は削除された。
- 6. 添付書類の目録

請求の範囲第22頁及び第23頁

請 求 の 範 囲

(補政後) 1. 抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、抄紙機の運転により紙体が供給されている状態において、カンバスとドライヤとの間に紙体が圧接される前の段階で、カンバスの直接表面に対して、連続的に 0. 1~200 m g/m²・分のシリコンオイルを供給付与せしめ続けることを特徴とする汚染防止方法

2. 抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、抄紙機の運転により紙体が供給されている状態において、カンバスとドライヤとの間に紙体が圧接される前の段階で、カンバスを案内するカンバスロールの表面に対して、連続的に 0. 1~200 mg/m²・分のシリコンオイルを供給付与せしめ続けることを特徴とする汚染防止方法。

3^(横正教)シリコンオイルを界面活性剤で乳化したものを使用することを特徴とする請求項1又は2記載の汚染防止方法。

4^(補正後) 更にシリコンオイルを水で希釈して使用することを特徴とする請求項1又は2記載の汚染防止方法。

5 (納成) 散布寸前に50~80℃に加熱した水で希釈して使用することを特徴とする請求項1又は2記載の汚染防止方法。

6^(織歩) 抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、以下1)~4)の工程を含むことを特徴とする汚染防止方法。

1) カンバスにシリコンオイルを供給付与するシリコンオイル供給

付与工程

- 2)カンバスの面にシリコンオイルを熱と圧力で浸透付着させる浸透付着工程
- 3) カンバスに紙が圧接されてシリコンオイルが紙に転移するシリコンオイル転移工程
- 4)移行して減耗したカンバスのシリコンオイルを補充するシリコンオイル補充工程
- 7. 抄紙機において紙体の乾燥に使用する円筒状ドライヤに対して、該紙体を押圧するためのカンバスに関する汚染防止方法であって、以下の工程1)~5)を含むことを特徴とする汚染防止方法。
- 1) アウトロールにシリコンオイルを供給付与するたためのシリコンオイル供給付与工程
- 2) アウトロールからカンバスにシリコンオイルを移行させるため のシリコンオイル移行工程
- 3) カンバスの面にシリコンオイルを熱と圧力で浸透付着させるシ リコンオイル浸透付着工程
- 4) カンバスに紙が圧接されてシリコンオイルが紙に転移するシリコンオイル転移工程
- 5) 転移して減耗したカンバスのシリコンオイルを補充するシリコンオイル補充工程
- 8. (削除)
- 9. (肖月除)
- 10. (削除)
- 11. (削)余)
- 12. (附除)

Translation

PATENT COOPERATION TREATY

DUPLICATE

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT-99-M03	FOR FURTHER ACTION SeeNotificationofTransmittalofInternational Preliminary Examination Report (Form PCT/IPEA/416)				
International application No. PCT/JP99/05023	International filing date (day/m 14 September 1999 (14	· •			
International Patent Classification (IPC) or n D21F 1/32	lational classification and IPC				
Applicant	MAINTECH CO., I	LTD.			
1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of3					
Date of submission of the demand	Date of	f completion of this report			
14 September 1999 (14.	.09.99)	16 January 2001 (16.01.2001)			
Name and mailing address of the IPEA/JP	Author	Authorized officer			
Facsimile No.	Teleph	one No.			

Interna

International application No.

PCT/JP99/05023

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

I.	Basis	of the re	I. Basis of the report					
1.	With	regard to	the elements of the international application:*					
		the inter	mational application as originally filed					
	\boxtimes	the desc	ription:					
			1-21	, as originally filed				
		pages		. filed with the demand				
		pages	, filed with the letter of					
	\square	4b1-i-						
		the clair		, as originally filed				
		pages -	, as amended (together v	with any statement under Article 19				
		pages .		, filed with the demand				
		pages	1-7, filed with the letter of					
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	\boxtimes	the drav		, as originally filed				
				, as originary med				
		pages	, filed with the letter of					
		pages						
	∐ t		nce listing part of the description:					
		pages						
l		pages		, filed with the demand				
		pages .	, filed with the letter of					
2.	the ir	nternation e element the lang	o the language, all the elements marked above were available or furnished to this hal application was filed, unless otherwise indicated under this item. Its were available or furnished to this Authority in the following language guage of a translation furnished for the purposes of international search (under Rulguage of publication of the international application (under Rule 48.3(b)).	which is:				
			guage of the translation furnished for the purposes of international preliminary of	examination (under Rule 55.2 and/				
3.	With	n regard minary ex	to any nucleotide and/or amino acid sequence disclosed in the internation was carried out on the basis of the sequence listing:	onal application, the international				
	\square	contain	ed in the international application in written form.					
	\square		led together with the international application in computer readable form.					
	Щ		ed subsequently to this Authority in written form.					
	Щ		ed subsequently to this Authority in computer readable form.	1.00				
			atement that the subsequently furnished written sequence listing does not tional application as filed has been furnished.	go beyond the disclosure in the				
			atement that the information recorded in computer readable form is identical turnished.	o the written sequence fisting has				
4.		The am	nendments have resulted in the cancellation of:					
			the description, pages					
			the claims, Nos. 8-13	<u> </u>				
			the drawings, sheets/fig					
5.	. 🔲	This rep	port has been established as if (some of) the amendments had not been made, single the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**	ce they have been considered to go				
	in th	iis report 70.17 <u>)</u> .	sheets which have been furnished to the receiving Office in response to an invitation as "originally filed" and are not annexed to this report since they do not	contain amendments (Rule 70.16				
*	⁺ Any I	replacem	ent sheet containing such amendments must be referred to under item 1 and annex	sea to this report.				

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP99/05023

7. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement						
1. Statement						
Novelty (N)	Claims	1-7	YES			
	Claims		NO			
Inventive step (IS)	Claims	2	YES			
	Claims	1,3-7	NO			
Industrial applicability (IA)	Claims	1-7	YES			
	Claims		NO			

2. Citations and explanations

Claim 1

A. . >

Document 1 [GB, 2284833, A (Steven Frederick Finch), 21 June, 1995 (21.06.95)] describes, "The utilization of cationic and amine active silicone fluids and of dimethyl siloxane emulsion to provide this hydrophobic layer to the dryer fabric" in claim 3, and "During the next circuit of the fabric around the cylinders, the silicone film and the associated sticky particles are removed from the fabric to waste" on page 2, line 22 and thereafter. This claim 1 describes the addition of 0.1 to 200 mg/m² of a silicone oil, but it is considered to be easy for a person skilled in the art, to numerically decide a range of just-sufficient amounts to be added.

Claims 3-5

As described above, document 1 uses polydimethyl siloxane as an emulsion. Since the use of a surfactant is a well-known commonly used means for obtaining an emulsion, the state of the silicone oil when it is applied does not matter.

Claims 6 and 7

See Fig. 1 of document 1. The use of a roller applicator is shown.

Therefore, the subject matters of the above claims do not appear to involve an inventive step.

Claim 2

Document 1 does not describe to the effect that a silicone oil is applied to a canvas roll. So, the subject matter of this claim appears to be novel. Furthermore, the document neither includes any description to suggest the application to a canvas roll, nor arouses to the prevention of contamination due to the canvas roll. So, the subject matter of this claim appears to involve an inventive step.